

CLAIMS

WHAT IS CLAIMED:

1. A communications system, comprising:

a physical layer hardware unit adapted to communicate data over a communications
5 channel in accordance with assigned transmission parameters, the physical
layer hardware unit being adapted to receive an incoming signal over the
communications channel and sample the incoming signal to generate a digital
received signal; and

a processing unit adapted to execute a standard mode driver in a standard mode of
10 operation and a privileged mode driver in a privileged mode of operation,
wherein the standard mode driver includes program instructions adapted to
extract encrypted data from the digital received signal and pass the encrypted
data to the privileged mode driver, and the privileged mode driver includes
15 program instructions adapted to decrypt the encrypted data to generate
decrypted data including control codes and transfer the control codes to the
physical layer hardware unit, the physical layer hardware being adapted to
configure its assigned transmission parameters based on the control codes.

2. The system of claim 1, wherein the control codes include at least one of a
20 power level assignment, a frequency assignment, and a time slot assignment.

3. The system of claim 1, wherein the privileged mode of operation comprises a
system management mode of operation.

4. The system of claim 1, wherein the standard mode driver includes program instructions adapted to issue a signal to the processing unit to initiate a change from the standard mode of operation to the privileged mode of operation.

5 5. The system of claim 4, wherein the signal comprises a system management interrupt.

6. The system of claim 1, wherein the processing unit includes a memory device adapted to store the encrypted data, and the standard mode driver includes program instructions adapted to pass a pointer indicating a location of the encrypted data within the memory device to the privileged mode driver.

7. The system of claim 1, wherein the privileged mode driver includes program instructions adapted to extract user data from the decrypted data and pass the user data to the standard mode driver.

8. The system of claim 7, wherein the processing unit includes a memory device adapted to store the user data, and the privileged mode driver includes program instructions adapted to pass a pointer indicating a location of the user data within the memory device to the standard mode driver.

9. The system of claim 1, wherein the privileged mode driver include program instructions adapted to encrypt the control codes and pass the encrypted control codes to the standard mode driver, the standard mode driver includes instructions adapted to send the

encrypted control codes to the physical layer hardware unit, and the physical layer hardware unit is adapted to decrypt the encrypted control codes to reconstruct the control codes.

10. The system of claim 1, wherein the privileged mode driver includes
5 instructions adapted to transfer the control codes directly to the physical layer hardware unit.

11. The system of claim 1, wherein the processing unit comprises a computer.

12. The system of claim 11, wherein the computer includes:
10 a processor complex adapted to execute the program instructions in the standard mode driver and the privileged mode driver;
a bus coupled to the processor complex; and
an expansion card coupled to the bus, the expansion card including the physical layer
15 hardware.

13. The system of claim 1, wherein the processing unit includes a system basic
input output system (BIOS) memory adapted to store the privileged mode driver.

14. The system of claim 13, wherein the processing unit is adapted to load the
20 privileged mode driver from the system BIOS into a protected memory location during initialization of the computer.

15. A method for configuring a transceiver, comprising:
receiving encrypted data over a communications channel in a standard processing
25 mode of a processing unit;

transitioning the processing unit into a privileged processing mode;
decrypting the encrypted data in the privileged processing mode;
extracting control codes from the decrypted data in the privileged processing mode;
and

5 transmitting an upstream signal over the communications channel based on
transmission assignments defined by the control codes.

16. The method of claim 15, wherein transmitting the upstream signal comprises
transmitting the upstream signal based on at least one of a power level assignment, a
10 frequency assignment, and a time slot assignment.

17. The method of claim 15, wherein transitioning the processing unit into the
privileged processing mode comprises a transitioning the processing unit into a system
management mode of operation.

18. The method of claim 15, wherein transitioning the processing unit into the
privileged processing mode comprises initiating a system management interrupt.

19. The method of claim 15, further comprising specifying a pointer indicating a
20 location of the encrypted data within a memory device of the processing unit.

20. The method of claim 15, further comprising sending the control codes to a
communications device adapted to transmit the upstream signal in the privileged processing
mode.

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21. The method of claim 15, further comprising:
encrypting the control codes in the privileged processing mode;
transitioning the processing unit into the standard processing mode; and
sending the encrypted control codes to a physical layer device adapted to transmit the
upstream signal in the standard processing mode.

22. The method of claim 21, further comprising:
decrypting the encrypted control codes in the physical layer device; and
configuring the physical layer device based on the control codes.

23. The method of claim 15, further comprising:
extracting user data from the decrypted data in the privileged processing mode;
transitioning the processing unit into the standard processing mode; and
processing the user data in the standard processing mode.

24. The method of claim 23, further comprising specifying a pointer indicating a
location of the user data within a memory device of the processing unit.

25. A modem, comprising:
means for receiving encrypted data over a communications channel in a standard
processing mode of a processing unit;
means for transitioning the processing unit into a privileged processing mode;
means for decrypting the encrypted data in the privileged processing mode;
means for extracting control codes from the decrypted data in the privileged
processing mode; and

means for transmitting an upstream signal over the communications channel based on transmission assignments defined by the control codes.

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